

**List of designations and abbreviations**

$B_i$	(weighted) extended B-splines (WEB-splines)
$b_i$	inner B-splines
$b_j$	outer B-splines
$b_k$	relevant B-splines
$d$	dimension of B-Splines
dist	distance function
dist( $x$ )	distance of point $x$ from boundary $\Gamma$
$c_{i,j}$	coupling coefficients
$f$	perturbation function (right hand side of the differential equation)
FE	Finite Element
$h$	grid width, edge length
$I$	index set of the inner splines
$I(j)$	index set of the inner splines coupled to an outer spline
$i$	index of an inner spline
$J$	index set of the outer splines
$J(i)$	index set of the outer splines coupled to an inner spline
$j$	index of an outer spline
$k$	$d$ -dimensional grid index
$m$	order of convergence
$n$	degree of B-splines
$p_i$	$d$ -variate polynomial of degree $n$
$Q_k$	support of B-spline with index $k$
$s$	bound of the support portion in $\Omega$
$u$	solution of the differential equation
$v$	flow velocity
$w(x)$	weight function

WEB weighted extended B-spline

$x_i$  weight point in the simulation region

$Z_k$  grid cells

$\delta$  parameter, the width of the strip in which the weight function rises

$\Gamma$  boundary of the simulation region

$\Omega$  simulation region

1 definition of the simulation region

2 input and storage of boundary conditions

3 establishment of control parameters

4 determination of a grid and cell classification

5 classification of the B-splines

6 determination of the coupling coefficients

7 determination of a weight function

8 determination of weight points and scaling factors

9 assembling of a system of equations

10 solution of the system of equations

11 computation of an approximate solution

12 output of the approximate solution

20 control points

21 grid

22 outer grid cells

23 grid cells on the boundary

24 inner grid cells

25 stream lines

30 computer means

- 31 keyboard
- 32 read station
- 33 receiving station
- 34 output means
- 35 central control means
- 36 computer unit
- 37 storage means
- 38 data medium